

Amendments to the Specification

Please insert the paragraph beginning at page 1, line 4 as follows:

This application is a divisional application of U.S. Patent Application Serial No. 10/043,166, filed on January 14, 2002, which in turn is a divisional application of U.S. Patent Application Serial No. 09/181,670, filed on October 29, 1998. This application is also based upon and claims the benefit of Japanese Patent Application Nos. 09-316032 filed on October 30, 1997, 09-368537 filed on December 26, 1997 and 10-230230 filed on July 31, 1998, the contents of which are incorporated herein by reference.

Please amend the paragraph beginning on page 1, line 26 as follows.

Since the opening trim 51 is required to be curved along a corner of the door opening peripheral edge, it has a corner section C which curves between straight sections S, S. In order to form the corner section C where this curved shape is maintained, the sealing portion 54 in the corner section C is first cut off ~~remaining~~ so that only its inner peripheral part 54a remains, as shown in Fig. 24. Next, the extruded product 52 is set in a molding apparatus (not shown) ~~with~~ while being curved at the corner section C, and a sponge rubber material is injected into the cut off part of the sealing portion 54, thereby forming a molded part 57, as shown in Fig. 25. At this time, the molded part 57 is connected to the remaining inner peripheral part 54a. In order to expand the sealing area of the corner section C toward its outer periphery according to the corner shape of the door panel 3, the molded part 57 is formed so as to project toward the outer periphery of the corner section C. In Fig. 25, cross-hatching lines are shown only to make the range of the molded part 57 clear.

Please amend the paragraph beginning on page 2, line 17 as follows.

However, since the sealing portion 54 in the corner section C is almost ~~cut-off~~ entirely removed and replaced by the molded part 57, the range of the molded part 57 becomes large, which ~~brings a problem in~~ may detract from the appearance and durability of the resulting opening trim 51.

Please amend the paragraph beginning on page 4, line 4 as follows.

At a corner section 152a of the extruded rubber product 152, a molded part 157, which has a curved configuration and has a projecting part extending toward the outer peripheral side over the outer peripheral outline of the attachment portion 153 in accordance with the corner shape of the door panel 103, is provided. In order to form the molded part 157, the sealing portion 154 in the corner section 152a is first cut ~~off~~ remaining so that only its inner and outer peripheral parts 154a and 154b remain. These parts 154a and 154b form inner and outer peripheries of the extruded rubber product 152 when the product 152 is curved, respectively. Next, the extruded rubber product 152 is set in a metal mold ~~with~~ while being curved ~~to accord with~~ according to the corner shape of the door panel 103, and a sponge rubber is injected into the cut off part of the sealing portion 154, thereby forming a molded part 157.

Please amend the paragraph beginning on page 4, line 19 as follows.

However, once the extruded rubber product 152 is removed from the mold after the molded part 157 is formed as shown in Fig. 33, the corner section 152a, which has been curved until then, almost recovers its straight shape by the shape recovery force of the insert 156 as shown in Fig. 34. This requires operators who ~~assembles~~ assemble the opening trim

151 onto an automobile body to curve the corner section 152a again with their hands so as it to accord in accordance with the corner shape of the door panel 103, which is bothersome.

Please amend the paragraph beginning on page 4, line 28 as follows.

Moreover, when the corner section 152a recovers its straight shape, hems 157a on the both sides of the projecting part of the molded part 157 are loosened, thereby transforming the projecting part into a wavy shape. If a long period of time passes ~~with~~ while the projecting part ~~being~~ is transformed into a wavy shape, the wavy shape remains in the projecting part, which deteriorates a sealing ability and appearance of the projecting part.

Please amend the paragraph beginning on page 5, line 19 as follows.

Furthermore, since the projecting part of the molded part 157 ends in a free edge, it is ~~easy to be~~ easily turned over or swayed by the ~~open and closed~~ opening and closing of the door panel ~~or its aged deterioration~~ and is likely to deteriorate with age, which deteriorates a sealing ability and appearance of the projecting part.

Please amend the paragraph beginning on page 5, line 25 as follows.

It is, therefore, an object of this invention to provide a weather strip ~~which~~ that can provide ~~an~~ a uniform luster on its surface by making an extruded sealing portion to appear on its surface as much as possible even in a corner section and ~~which~~ that can ~~hardly make a~~ reduce the appearance of a borderline between an extruded part and a molded part ~~to see~~, thereby improving the overall appearance. Furthermore, it is another object of this invention to provide a weather strip ~~which~~ that can improve the durability of a sealing portion in a corner section.

Please amend the paragraph beginning on page 6, line 7 as follows.

It is a further object of this invention to provide a weather strip ~~which~~ that can improve an assembling ability onto an automobile body, a sealing ability and an appearance by preventing a shape recovery of a curved corner section.

Please amend the paragraph beginning on page 8, line 9 as follows.

A weather strip according to each of the above described inventions can provide ~~an a~~ a uniform luster on its surface by making an extruded sealing portion ~~to~~ appear on its surface as much as possible even in a corner section. The weather strip ~~can hardly make~~ reduces the appearance of a borderline between an extruded part and a molded part ~~to see~~, thereby improving the overall appearance. Furthermore, the durability of a sealing portion in a corner section can also be improved.

Please amend the paragraph beginning on page 11, line 14 as follows.

The ~~forth~~ fourth invention provides a weather strip comprising an extruded body having straight sections and a corner section curving therebetween, the extruded body comprising an attachment portion and a sealing portion integrally formed by an extrusion molding, the attachment portion being attached to a part of an automobile, the sealing portion sealing a gap between an opening peripheral edge of the automobile and an open and closed panel, the sealing portion being cut off in a curved corner section, and a curved molded part being formed in place of the cut off part, wherein the molded part is formed from a soft thermoplastic elastomer (TPE), and a recovery preventing portion is formed on the attachment portion by an injection molding from a hard resin, the recovery preventing portion extending in the peripheral direction of the corner section.

Please amend the paragraph beginning on page 12, line 1 as follows.

A weather strip according to the ~~forth~~ fourth invention can improve an assembling ability onto an automobile, a sealing ability and an appearance by preventing a shape recovery of a curved corner section.

Please amend the paragraph beginning on page 12, line 5 as follows.

It is preferable that the molded part comprises a projecting part extending toward the outer peripheral side over the outer peripheral outline of the attachment portion, and a belt-shaped bridge connecting the outer edge of the projecting part and the attachment portion. Such a construction prevents the projecting part of the molded part from turning over or swaying by the ~~open and closed~~ opening and closing of the door panel or its aged deterioration with age, thereby improving the sealing ability and appearance.


Please amend the paragraph beginning on page 15, line 28 as follows.

Description will now be made of opening trims embodying the invention with reference to Figs. 1 – 23. The first to ninth embodiments are mainly employed for attaining the above-mentioned objects.

Please amend the paragraph beginning on page 16, line 26 as follows:

Since the opening trim 11 is required to be curved along a corner of the door opening peripheral edge, it has a corner section C which curves between straight sections S, S. This curved shape of the corner section C has to be maintained. In order to expand the sealing area of the corner section C toward its outer periphery in accordance with the corner shape of the door panel 3, the sealing portion of the corner section C is required to project toward the outer periphery of the corner section C. The inner and outer peripheries of corner section C are the

areas on corner section C where its radiuses are the smallest and the largest, respectively.

Construction of the corner section C will be described in detail by the following forming process. (1) First of all, the sealing portion 14 is cut to make a linear incision slit 19 provided on a loop edge 17 on the outer periphery of the corner section C to thereby form an incision edge 14b on the outer periphery of the sealing portion 14, as shown in Figs. 3 (see double dashed lines) and 4. Furthermore, as shown in Figs. 1, 2 and 4, cuts 18, 18 are made in the sealing portion 14, which run from the incision edge 14b toward the inner periphery of the corner section C in the vicinity of both ends of the incision slit 19 (in the vicinity of each boundary between the corner section C and the straight sections S, S) to thereby form a -shaped incision fin 14a.

Please amend the paragraph that begins on page 18, line 5 as follows:


(3) An EPDM sponge rubber material is injected through a gate 27 (see Fig. 5) into a region in the vicinity of the outer surface of the attachment portion 13 that faces the back side of the incision edge 14b of the incision fin 14a. Flowing along the back side of the incision fin 14a from the inner periphery of the corner section C toward the outer periphery thereof, the material is foamed and fills the cavity 26. As a result, a molded part 30 for maintaining the curved shape of the corner section C is formed along the outer surface of the attachment portion 13 and the entire back side of the incision fin 14a, and inside the cuts 18, 18 which are expanded by the above described curved transformation of the opening trim 11. As shown in Fig. 3, a cross section of the molded part 30 is J-shaped. In Fig. 1, cross-hatching lines are shown only to make the range of the molded part 30 clear (it is the same in Figs. 9, 11, 15, 16, 19 and 21 where other embodiments are shown). Though the thickness of the molded part 30 is not specifically limited, 0.5 to 3 mm is preferable, and 1 to 2 mm is more

preferable. As for this embodiment, the thickness is 1.2 mm on the average though it depends on the position.

Please amend the paragraph that begins on page 19, line 6 as follows:

Moreover, two ribs 31 are integrally provided on the molded part 30 formed on the back side of the incision fin 14a, and extend in a direction where the corner section C curves along. The ribs 31 reinforce the rigidity of the molded part 30, and serves to maintain the curved shape of the corner section C.

Please amend the paragraph beginning on page 19, line 12 as follows:

Unlike ~~the~~ a conventional weather strip (opening trim) wherein the majority of the sealing portion in the corner section is cut off, according to the opening trim 11 of the present embodiment as described above, the sealing portion 14 ~~is remaining~~ remains as the  - shaped incision fin 14a, and the incision edge 14b is spread out to project toward the outer periphery of the corner section C. As a result, the extruded sealing portion 14 (including the incision fin 14a) is shown (appears on the surface) as much as possible. To the contrary, the molded part 30 appears on the surface as ~~less~~ little as possible except that it is slightly seen inside the cuts 18, 18 and seen in a place which projects from the spread incision edge 14b. Therefore, the opening trim 11 of the present embodiment can provide ~~an~~ a uniform luster on its surface. The weather strip reduces the appearance of ~~can hardly make~~ a borderline between the extruded sealing portion 14 (including incision fin 14a) and the molded part 30 ~~to see~~, thereby remarkably improving the overall appearance.

Please amend the paragraph that begins on line 19 of page 20 as follows:

Next, Fig. 6 shows an opening trim 11 of the second embodiment. The opening trim 11 is different from that of the first embodiment only in ~~a point~~ that a molded part 30 is formed within the range of the back side of the incision fin 14a ~~so as not to~~ and does not project from the spread incision edge 14b toward the outer periphery of the corner section C. This embodiment is suitably employed when spreading ~~out of~~ of the incision edge 14b is sufficient to expand the sealing area of the corner section C toward its outer periphery in accordance with the corner shape of the door panel 3; and it has the advantage of ~~being able to hardly show~~ showing the molded part 30. As shown in Fig. 6, a cross section of the molded part 30 is J-shaped.

Please amend the paragraph beginning on page 21, line 24 as follows.

This embodiment can be modified so as that the molded part 30 does not ~~to~~ project from the spread incision edge 14b toward the outer periphery of the corner section C.

Please amend the paragraph beginning on page 22, line 10 as follows.

[~~Forth~~ Fourth Embodiment]

Please amend the paragraph beginning on page 22, line 11 as follows.

Next, Figs. 8 and 9 show an opening trim 11 of the ~~forth~~ fourth embodiment. The opening trim 11 is different from that of the first embodiment in the following points. Namely, the incision slit 19 is replaced with a cutout long hole 33 formed by cutting out a part of the sealing portion 14 ~~which~~ that is on the outer periphery of the corner section C and is not seen from the front side (the part is shown in Fig. 8 which shows the sealing portion 14 seen from the outer side, while it is not shown in Fig. 9, which shows the sealing portion 14

seen from the front side). A cutout edge 14c of the sealing portion 14 is formed along the long hole 33, and a round hole 18a is formed at the end of each cut 18. Each end of the cutout long hole 33 forms a semicircle.

Please amend the paragraph that begins on line 22 of page 23 as follows:

After the cutout edge 14c is formed by providing the cutout long hole 33 and the cut 18 on the sealing portion 14 as shown in Fig. 10, the cutout edge 14c is curved as described in the first embodiment and spread out to project toward the outer periphery of the corner section C. Then, as shown in Figs. 11 to 13, a molded part 30 for maintaining the curved shape of the corner section C is formed in the vicinity of the cutout edge 14c on the back side of the incision fin 14a, and inside the expanded cut 18. As shown in Fig. 13, a cross section of the molded part 30 is J-shaped.

Please amend the paragraph beginning on page 24, line 3 as follows.

This embodiment can be modified as shown by double dashed lines in Fig. 13 so as that the molded part 30 ~~to be~~ is formed along the entire back side of the incision fin 14a and the entire outer surface of the attachment portion 13. The molded part 30 may not be formed ~~over~~ to project from the spread cutout edge 14c toward the outer periphery of the corner section C.

Please amend the paragraph beginning on page 25, line 6 as follows.

This embodiment can be modified as shown by double dashed lines in Fig. 17 so as that the molded part 30 ~~to be~~ is formed along the entire back of the sealing portion 14 and the entire outer surface of the attachment portion 13. The molded part 30 may not be formed ~~over~~ to project from the spread cutout edge 14c toward the outer periphery of the corner section C.

Please amend the paragraph beginning on page 27, line 10 as follows.

As shown in Fig. 20, the cut 18 is made in the sealing portion 37, which ~~run~~ runs from the free edge 37b toward the inner periphery of the corner section C in the vicinity of the center of the corner section C. The attachment portion 13 and the sealing portion 37 are curved as described in the first embodiment and the free edge 37b is spread out to project toward the outer periphery of the corner section C. Then, as shown in Fig. 21, a molded part 30 for maintaining the curved shape is formed only in the vicinity of the free edge 37b on the back side of the free fin 37a, and inside the cut 18, which is expanded by the above described curved transformation of the opening trim 11.

Please amend the paragraph beginning on page 27, line 22 as follows.

This embodiment can be modified so as that the molded part 30 ~~to be~~ is formed along the entire back side of the free fin 37a and the entire outer surface of the attachment portion 13. The molded part 30 may not be formed ~~over~~ to project from the spread free edge 37b toward the outer periphery of the corner section C.

Please amend the paragraph beginning on page 27, line 28 as follows.

As for such an opening trim 11 having a lip-shaped sealing portion 37 which that is connected to the attachment portion 13 at one end with the other end thereof being free, as exemplified in the seventh or eighth embodiment, it is necessary to make at least one cut in the sealing portion 37. If the free edge 37b is spread out without making any cuts, ~~which will influence~~ the cross-section of the sealing portion 37 in the extruded straight section S, ~~too~~ will also be affected (especially, the cross-section of the other free end which is not connected to the attachment portion 13).

Please amend the paragraph beginning on page 31, line 25 as follows.

The cross-section of the molded part 117 in ~~its both~~ both of its ends almost corresponds to that of the outer peripheral part 114b of the cut off sealing portion 114, while the cross-section of the molded part 117 on its center is squarish on the outer periphery to serve as the projecting part in accordance with the corner shape of the door opening peripheral edge. On the back side of the squarish part, both sides of the bridge 22 open apart from the attachment portion 113.

Please amend the paragraph beginning on page 33, line 28 as follows.

Moreover, the bridge 122 supports the projecting part of the molded part 117, which prevents the projecting part from turning over or swaying by the ~~open and closed~~ opening and closing of the door panel or its ~~aged~~ deterioration with age, thereby improving the sealing ability and appearance.